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THE WASTEFUL METHODS BEING PRACTICED IN MINING COAL IN THE STATE.

With the advancement of science in all branches of our industries, it seems but proper that we should give our attention to the methods in use of reclaiming our coal from the several fields of the State. It is of the highest importance not only to the operators and their employes, but to those engaged in every avocation of life, that the mines be so operated that the largest percentage of coal should be taken out, and to the end that the priceless treasure deposited in our commonwealth, may be so mined as to bring the greatest benefit to the greatest number of citizens.

Coal is mined in twenty-eight counties in the State, in which veins from No. 1 to No. 8 inclusive, are mined. In no county, to my knowledge, are they all found in economic quantities. Neither seam appears to carry the same characteristics in more than one field. While this fact would seem to require a diversity of methods in mining it, there are but three systems in use in the State. *Viz.*: the single entry, the double entry, both with room and pillars, and the County of Durham system, which is only in use in and about Steubenville. Why this plan, so admirably adopted to the economic production of coal in the thinner veins of the State, has not come into more general use, has always been a mystery to me. The single entry system was introduced in the Mahoning and upper Tuscarawas Valleys, with the early mining operations of the State and has become so thoroughly installed by age, that it will doubtless continue throughout the life of the field which is rapidly approaching the end. This system extended southward with the developments as they advanced down the upper Tuscarawas Valley, and even south of it, though with less uniformity. It is a matter of great doubt whether a more economic system of production could be used in any of the block coal fields, owing to the narrow-serpentine swamp, in which the entries must be driven, thus preventing the adoption of the double entry system. The rapidly ascending sides of the basin precludes the "Long Wall" or "County of Durham" systems being practicable. Again the strong and flexible slate roof which overlies this coal, enables a person of good judgment and skill to mine fully 90 per cent. of the coal. In many cases, however,

the want of proper judgment or the avarice of operators has caused the loss of large quantities of this coal, only a very small percentage of which has been or can be reclaimed. From observation extending over twenty years in these mines and with the exception of a few instances, fully 10 per cent. of the coal has been lost.

From Akron south, the quality and characteristics of the No. 1 coal changes. The swamps are wider and better admit of the double entry system which has been more or less adopted during the later years. A pioneer operator in this valley places the number of openings that have been made in this vein at sixty, of which about twenty are now in operation. These openings embrace the area of 4200 acres of coal that will average 6000 tons per acre or 25,200,000 tons. Of this field, 1700 acres remain unmined, which shows that that field has 10,200,000 tons developed and untouched. It is estimated of that which has been mined 10 per cent. has been lost, equalling 1,500,000 tons, while by proper management by the same system, only 4 per cent. or 600,000 tons would be lost. This indicates that in this field alone 900,000 tons of the States wealth has been lost by bad mining.

In the softer coals of the Carroll and Tuscarawas counties the double entry system is generally adopted, and here the most reckless waste has been and is still going on. It is mostly attributable to the greed of getting out the greatest quantity of coal from the very beginning of operation, which results in the leaving of insufficient pillars and allowing the water to accumulate on the fire clay which forms the coal floor, causing it to heave and close up the mine. The openings all being above the water level are not expensive, and their loss is not regarded as a serious matter. There are numerous instances where fully 25 to 30 per cent. of the coal is lost. I will now consider the No. 6 vein in Jefferson County, which has been mined along the river front from Yorkville near the Belmont County line to a point about five miles above Steubenville where it is lost in the air. The frontage along the river is about twenty miles. It has not been worked much over a mile in the westerly direction. The total amount worked over along the river front will probably not exceed 1,500 acres. This vein lays very level and generally is about 3'-6" in thickness. It is mined on the "County of Durham" system, which leaves fully one-half in pillars, as the work advances. This is left in such a condition that it can be so nearly all taken out while drawing back that the percentage of loss is hard to estimate. Of thirty-five acres of pillars drawn in

one mine and some forty or more in another it is said, and truthfully so I think, that none was lost.

In the No. 8 or Pittsburgh vein, which run through Belmont and Jefferson counties, is about six feet in thickness, the double entry system is nearly if not entirely adopted where it has been the most extensively mined. They have trouble in holding up the draw slate which overlies it, and in the majority of the mines no attempt is made to draw the room pillars and but a small proportion of the entry stumps. Where this is the case from 25 to 30 per cent at least of this valuable coal is lost. The vast area underlain with this vein, if this policy is persisted in, will lose the State an amount of money that it would be hard to estimate.

I now come to the No. 6 or "Big Vein" extensively mined in Athens, Hocking and Perry counties, known in the market as the "Hocking Valley" coal, which furnished thirty-three and one-half per cent. of the State's output last year. This vein in these counties is from five to thirteen feet in thickness, a large portion of it averaging seven feet. That large portions of this vein have been wasted is conceded by every one who is familiar with the operations. A gentleman who is familiar with the Hocking Valley from the time it was opened to the markets, places the proportion of the coal wasted of that which has been worked out, at 40 per cent., and others have estimated it at even a higher figure. I have not been able to secure estimates of the entire field of this coal with sufficient exactness to give at this time. A gentleman who is an expert in this matter, places the area of this coal lying south of the divide at Straitsville and north of the B. & O. Southwestern R. R. and its branches, exclusive of Green Township, where Haydenville is located, at 38,235 acres, under which he estimates that there were 267,846,375 tons of marketable coal. Of this amount, he places 5,803 acres, equaling 49,899,600 tons as having been sent to the market. The loss in mining this field by the present methods, he places at 8 per cent., which will amount to 21,427,710 tons. The loss by the bad methods in the early days, he places at 12 per cent. To what proportion of the fifty million tons already mined this percentage will apply, it is difficult to estimate, but a saving of even 4 per cent. on the amount already mined would amount to 10,713,855 tons, an amount equal to the entire output of the State during the year 1889. These figures apply to only eight of the townships which lie along the C. H. V. & T. R. R. In the Sunday Creek Valley which is tapped by the T. & O. C., K. & M., C. S. & H., and the Straitsville branch of the B. & O. R's, the loss of the coal is said by those who have been in the position to know, to exceed 40 per cent. in the territory already worked

over. Personal observation in old works of the mines which I have examined and the new and unused appearance of abandoned tipples in portions of the field would seem to corroborate this estimate.

The Cambridge field I have omitted, as it has not been so extensively mined as those before mentioned, and want of time has prevented me giving it a careful examination. The Jackson field which is among the most important fields of the State and one that is being extensively worked, is worthy of especial attention. The universal plan of mining there is the single entry room and pillar system. This system leaves from 20 to 30 per cent. of the coal as the mining advances and from personal observation in a number of the more extensive mines, my judgment is, a small portion of the pillars can never be drawn, and I see no reason why by the adoption of the County of Durham system in this vein, it cannot be all taken out, which would add to the life of this field fully one-fifth of what it will be under the present methods of mining. To review the matter in brief, it can readily be seen that the conservative and economical operator is placed at a disadvantage in the markets, when in competition with those who take the coal most convenient and of the best quality, regardless of that remaining. The value of the property in every town and of every home and business in the vicinity of these mining towns, as well as the larger cities from which they draw their supplies; the stocks and bonds of every railroad piercing these fields, depend upon the life of these coal fields, and all are enhanced in value in proportion to the degree in which their life can be prolonged.

It seems to the writer that our commonwealth has rights that are paramount to the greed and titles of foreign and non-resident operators, whose sole aim is to secure the greatest amount of wealth in the shortest time possible and retire in luxury and ease regardless of the interests of the people under whose fields nature has deposited large bodies of the finest coal in the nation.

I think it is but just to ourselves and our State, that the General Assembly should take hold of this matter and devise ways and means by which the greatest possible amount of our coal shall be reclaimed, by passing such laws as will enforce the adoption of the most economic methods of mining our coal.

MR. WILEMAN: I would like to ask Mr. Secretary if any other mines have the checker-board system which that mine has at Steubenville?

SECRETARY HASELTINE: I don't know about that. That is an old mine that is worked out. The system is known in that country as the County of Durham system because it is the system adopted in the County of Durham. It is worked out in alternative squares as described last night, and in that field where the coal lies level and uniform they are able to take it entirely out. I have been through a hundred acres of it that has been standing a great many years and there is not a bit of it but can be taken out. There is no weight on it. The pillars are 24 by 70 feet I think, and 18 feet is taken out on one side and 12 on the other.

THE CHAIR: Didn't they adopt that plan at Steubenville, Mr. Secretary, more especially because of the thickness of the vein than for any other reason?

SECRETARY HASELTINE: For the general safety of the mine.

THE CHAIR: Don't they push their coal out by man-power instead of mule?

SECRETARY HASELTINE: Yes sir, and they do the same in Jackson County also. It is about a little over four feet in thickness, that coal is. It is not applicable except for that kind of veins. It is not my idea to advocate any particular system. I have thought about the matter a great deal. Now there is a shameful waste in every portion of the State, but is worse in the southern and central portions of the State. I was in mines last summer and the summer before, and I don't think I exaggerate when I say that 30 per cent. of coal is standing there and was left there intentionally for the purpose as they explained it of leaving sufficient coal to hold the roof so as to avoid its breaking down and their being compelled to pump the surface water, and for that matter of economy they have left what belongs to the commonwealth. Now one-third of the coal is left there almost. Afterwards by miscalculation they broke the surface in another place, and have it to pump and the coal is lost in I don't know how many acres, perhaps 40 to 80 acres in that one block, and it is a common thing to break into old mines that are standing now

where they find large bodies of coal that have been lost. My idea has been this, that we should advocate it and agitate it and keep up a discussion of it here, and I think it would be well if the Institute would take some decisive steps and ask the Legislature to appoint a committee of expert men on this subject to visit the various coal fields and examine the mines and the method of mining, and arrive at a conclusion as to the best methods of taking out the greatest possible amount of coal, and have a law passed prescribing what the methods should be, a general method—you cannot make it absolute—but a general method in different parts of the State, and entrust it to the mining department to enforce that feature of the law. You cannot say to a man if the coal he is mining is unprofitable that he must mine that coal. That would be unjust and unfair. But you can say to him, "if this coal will not warrant being mined in the present condition of the market that you must leave it in a condition that future generations can mine it." Now in Belmont County there are miners and operators who will tell you they drive their pillars just narrow enough to hold up the roof so that they can finish and never expect to draw them. There is no question but 20 or 25 per cent. of the coal there is lost, and there is no doubt in my mind that a method can be adopted by which that coal under the most adverse circumstances can be reduced at least to 8 or 10 per cent, and by this means we could save in the State a million tons a year, and that would mean a million dollars per year coming into the State to be distributed through the avenues of the trade. The loss does not belong alone to the operator or miner but it extends to the grocer, the merchant, the railroad company and the man that has a little home in a mining town, perhaps all he has in the world. It affects every branch of business in the State and affects the wealth of the State.

PROF. SPERR: I should like to ask the Inspector here if he knows any reason why they could not mine coal as clean in the Sunday Creek Valley as they do in the Hocking Valley.

SECRETARY HASELTINE: I don't think there is any reason in the world, sir.

PROF. SPERR: The facts are they don't do it.

SECRETARY HASELTINE: The facts are they don't do it. It is said, Prof. Sperr, by people in a position to know—I don't know it—but it is said that there are mines in the Sunday Creek Valley that were abandoned where, in the mines, there were a hundred and fifty men employed the day before they were abandoned. Now every man in this audience knows that that is not the way mines are finished, that are finished properly, that there is a long time when less than ten men are employed.

PROF. SPERR: Mr. President, I think the thing that ought to be done, if it could be brought about in any way is this: that the laws ought to be such that when an operator failed to get the minimum percentage of coal out of the ground, which we might fix at 90 or 95 per cent, that he shall be prohibited from further operating that mine.

THE CHAIR: That mine or further operating any other mine in the State.

PROF. SPERR: No, not any other mine, because he might get another mine somewhere else where the conditions would be such that he would think that he could get 95 per cent. or would try it, because I don't think I would be ready to say that everywhere that a mine might be opened that it might be possible to get 95 per cent. of the coal. Let that alone and let it be mined out where it is possible to get 95 per cent. of the coal, and as we develop new methods and improve our old ones, we will constantly get more of the coal, as we have seen in the Hocking Valley in the last few years. Formerly they mined a great deal worse in the Hocking Valley than in the Sunday Creek Valley now, but they have improved their methods so that they now get 95 per cent. or more of their coal.

SECRETARY HASELTINE: Some of the operators do.

PROF. SPERR: That is those that keep the business up in good shape and see that the mine boss does not allow the coal to go to waste. Now would it be practical, I would ask those who are more familiar with the matter of legislation, to have a law

which would compel the operator to get a certain percentage of the coal out of the ground. How would that strike our American ideas, I wonder, of every man going as he pleases and getting everything he can and in his own peculiar way.

PROF. LORD: I think that Mr. Haseltine's paper touches a matter of the utmost importance and of the utmost interest. With the experience we have had in this State in the last ten years in connection with our oil fields and our gas fields, it strikes me that it is well to sound a word or warning in time in regard to the waste of our coal supply. Too much cannot be said on this subject, the crime that is being committed against the people of the United States and particularly the people of Ohio. The way in which stored mineral wealth has been wasted in the direction of our oil and gas supply every one is familiar with. What might have been of protracted value, and which carefully husbanded, might have been a source of very great and growing wealth to the State, has been turned into fire-works and burned up for amusement. We all know that, and the same thing is true to a certain extent of our coal. What we are going to do about it is a matter of a great deal of doubt. Our mineral riches are at the disposal of anybody and everybody, and everybody that has a mind to work with them. We are bound to conform to the average ideas of the average man who opens a mine, and what kind of legislation we can look for which must proceed from the foundation idea that all mineral wealth is the property of the State, and that the individual holds it in trust—what legislation we are to get, founded on that idea, it is difficult to understand, because that certainly is rather a foreign idea to American people. Our country is of course somewhat peculiar in its views of such matters. In other countries the mineral wealth is more carefully protected. I know that foreign writers speak of the wasteful methods of mining with perfect disgust. They say that any method is employed in this country that will enable us to mine not well but fast, that we are only killing the goose that lays the golden egg, etc. What we are going to do in the way of legislation to reach this point is a matter of grave importance. I think that the Institute should give expression

to their views on this question. If we talk about this enough and make everybody familiar with the fact that the methods are wasteful and that wealth belonging to the public is wasted, the idea may gradually grow that the State representing the people of the State has a right to protect not only itself but its posterity.

PROF. SPERR: Mr. President, I move you that a committee of two be appointed from this Institute to confer with the Inspector of Mines of the State of Ohio with reference to this question of exhaustive mining of coal, and looking toward proper legislation to enforce operators to obtain the maximum amount of coal from their fields.

A MEMBER: I second the motion.

SECRETARY HASELTINE: It seems to me, Mr. President, if it is not getting too late, that there are a great many gentleman here—there are a number of inspectors of mines here who are familiar with this, and I would like to have them give their views upon this subject.

THE CHAIR: We don't expect to close it up now. It is a very important matter. That paper is on a theme that I have thought a great deal of and touched upon very often. I think the best law if it could be reached is to get at the cause, the reason of coal being left in the mines, and in my opinion it is nothing more or less than what you might call the greed of the investors in coal mines. They don't understand that they lose a good deal of money by leaving coal in the ground. Now there is not an operator here or a man that has been investing in coal mines, but will know this to be a fact that all pillar coal that can be recovered is much more profitable than any other coal you have in your mine, and why? Because there is no dead work connected with it. Your entries are driven and all you have to pay for is the digging of the coal, and consequently it is more profitable than any other coal in the mine. The trouble is with the mine bosses themselves. The trouble is that the mine bosses, for the sake of showing good results immediately on the opening of the mine, will improperly work the mines and leave no pillars

where pillars should be, or leave very thin pillars and consequently a squeeze in some places will come and lose a good deal of the coal, or else if they don't lose the coal then this expense, a part of it that ought to have gone in the first place to recover that coal, becomes double and trebled. Now instead of doing that they leave it in there, because the mine boss wants to make a reputation and he will leave the coal in, because as sure as he tries to recover this coal his reputation as a mine boss is gone, because the operator don't understand the expense of recovering the coal. Now I know of several cases. I know a case of a coal mine—I know of some mines that will operate themselves almost. I have one mine to-day, the mine that my friend, Mr. Wileman here, spoke about—that mine will operate itself. There is no trouble with it. You can make the pillars of course too small, but I mean there is no trouble with the mine. It is dry, coal thick and all the conditions of the best. Now a few years ago in our district there was a mine very much like it. The mine boss went to work and worked all the thick coal in the mine, that is he would not touch anything where it would make extra expense, and after he was running the mine for two years the operators of the mine voluntarily advanced his salary \$300 per year. He didn't ask for it, but they voluntarily advanced his salary \$300 per year, because his results were such that they thought he was the best coal boss or coal operator in the United States. One of the operators told me what a great man he was, how he produced coal so cheap, etc. They made lots of money that year, and I made the remark to him, knowing this man very well, because he had been in my employ about a year and a half, said I, "Mr. so and so, in about a year or a year and a half or two years more you will change your tune entirely, and you will be the first man to cry this man down; that he didn't know anything about mining." Now in about two years the very thing came about that I told him, that same man came to me and told me the truth about that man; that he didn't know anything about a mine. Then they reduced his salary. Now why was that? The owners of the mine knew nothing about the coal mine. That is one instance. Then I have another instance of the same thing. I know one of the finest mines ever opened in

the Tuscarawas field which I myself had an interest in, but on account of politics I had to leave it and come down here to Columbus to take care of your money bags, and while I was away that mine was ruined. Why? The coal was thick, splendid coal, but the boss didn't attend to his business. In many places there were only 5 feet in the entry pillar. All miners here will know—I used to do it myself when I was a miner—when the coal is nice and working well gouge in and take all the pillars we can without leaving anything hardly. Now what was the consequence. The consequence was a squeeze there, and thousands of thousands of tons of coal are left inside that you can't get out. I spent two or three days going through rooms to get at where this difficulty was on the part of a mine boss. There were entries there that had been driven two years previous to that just as safe as this room to-day, but this new work that had been done there was all caved in, consequently to recover that coal cost three or four times, yes probably ten times as much as if left a good pillar. Now then I blame the mine bosses as much as I do anybody. They certainly know very well that they ought to leave enough of pillar. If they don't know that they ought not to be bosses. If I tell my mine boss, "I want you to leave not less than 16 feet between the entries," I expect he will do that. Of course it will vary from 16 to 20 feet right along. Perhaps more will be necessary in some mines than in others, but I contend this that if any mine is properly worked and leave the proper pillars to sustain the roof, that there is no trouble to exhaust that mine of its coal. Now I am surprised that what Mr. Secretary said about certain places in Belmont County, where they leave the entry pillars in. That I didn't know anything about. In our own valley we often leave the pillars until the very last thing we do, because our water is all up in the sand rock or else in the gravel above the gray rock. Now if we draw the pillars we get all this water immediately. Consequently we try to leave all the pillars in so we get no water as long as we possibly can. Eventually we get the water, but it is much easier to pump water for one year than it is for five. It is economy in that way. But there is no reason for losing these pillars, not a bit, as I said before if we have the proper method of mining.

Now there is a mine in our valley to-day, and Mr. Lewis knows the mine I refer to very well. It is a mine only about a year old, and probably about 50,000 tons more or less have been taken out of the mine, and in that mine with that small amount of coal taken out, the rock took a squeeze and it is creeping and is in danger of the main shaft and air shaft. Well now was that property worked? Why was it? The mine boss, if you can call him a mine boss, wanted to make a good showing to produce lots of coal, a large tonnage immediately, or in other words he was so anxious for the apple that he went to the trouble of climbing up the tree and pulling the apple before it was ripe. If he had waited for a while the apple would have fallen and he would have got it perfectly ripe. Now it is the same with this difficulty. In my mind there is more than in the mine bosses, and the trouble arises from the fact that the operators themselves don't understand that they had better do without or do with less profit in the beginning, so they will get more in the end. Now then I don't believe you can get any legislation on it, and the only legislation in my mind is that the inspector should make it a point to advise all operators in regard to that, and especially mine bosses and everybody connected with the mines to leave proper pillars, and if the proper pillars are left in to sustain your roof until you are ready to take them out, you can get almost all the coal out. Of course there will be some lost. It don't matter how well your mine is worked, there will be more or less lost. There is no question about that. But a mine ought to be and so far in our minds, every mine that I have operated I have drawn the pillars back right smack to the double parting, and in some cases right under the scale of the shoots before we quit it. Also as to the capacity of the mine, all mines can be worked profitable down to a certain capacity. Now when you cannot produce enough to make it pay by working a mine in the day-time, why of course our plan is invariably to work night shifts, double the men up, and in that way you can work the coal out clean, while if you work day shift you couldn't do it, but by double shift, working night and day, you can bring your coal back almost to the bottom of the shaft. I admit this is a very important matter. This is the most important matter in all mining, that is exhaustive min-

ing. There is no question about that at all, and it would be a very grand thing to have some method of recovering more coal, and I am surprised to hear to-night that the mines of Sunday Creek, etc., are so poorly mined. I supposed that we were behind other mines of the State in our valley because of difficulties we have that they don't have, but it seems we are ahead of them and I am very glad we are and we will try to do better in the future too.

SECRETARY HASELTINE: Mr. President, our president has got so in the habit of rubbing it in to the bank bosses that he can't help giving it to us a little to-night. Now I am going to defend the bank bosses a little. The great trouble with the great fields of coal in this State arises from the fact that they are fast drifting into the hands of large syndicates, large corporations and the great loss of pillars as a rule has been in the hands of just that class of operators.

PROF. SPERR: Not in the Hocking Valley. The Hocking Valley works the reverse of that, that the larger the syndicate the better they mine their coal.

SECRETARY HASELTINE: That might be true of one.

PROF. SPERR: Well arn't there a number of them down there.

SECRETARY HASELTINE: Well, it may be in the Hocking, but the rule is that the operator or the head of the concern, the management, lives in a distant city. They get their pay roll every month and they get their coal mined every month and they see how much their coal costs them, and if it costs a little more this month than last month, they inquire at once of their bank boss why it is and they warn him that that shan't occur again, and to avoid that he economizes in every way and takes every ton of coal he can out.

THE CHAIR: Let me ask the gentleman a question right there. Isn't it a fact as I said myself, that it was the greed of the operator, but that the blame lay secondly in the mine boss because he didn't do what he knew would be right.

SECRETARY HASELTINE: Because he don't take a stand against the operator and tell him what is his business.

THE CHAIR: Yes, and if every mine boss would do that it would be all right.

PROF. SPERR: It is the duty of the mine boss to advise his company of the best method.

SECRETARY HASELTINE: Yes, but the boss in the bank below this is working his mine with a less cost than his neighbors.

PROF. SPERR: But should not the bank boss possess sufficient intelligence that he could map out the field for his company and show them where they would gain by it.

SECRETARY HASELTINE: Yes, but men who live in cities and who know nothing of operation except by dividends it is a very difficult matter. Our President would understand it but he don't. Now there are acres and acres of that kind of mining going all the time, and if it is continued it will shorten the life of our coal fields in certain localities one quarter or maybe more, and when it comes to the Inspector telling a man how to mine, it is as much as the Inspector can get done to get the mine put in the condition that the law requires, and if he gets that done he is doing more than any of us have ever taken credit for doing up to the present time. I have been at a loss to know whether the legislature has any power in the matter. I don't know what would be the best thing to do, but if we can save on the present outlook in the State of Ohio 10 per cent. of the coal that is already lost, it amounts to a million and two hundred thousand tons of coal in a year. That means in twelve years we would save the entire output of the coal for one whole year at our present rate of mining.

MR. BLOWER: I have very little interest in this as regards this State, but the Institute of Pennsylvania, the Pittsburgh Central Institute passed a resolution at the last meeting on Christmas, and they are going to draw up resolutions and send to Congress to have a United States mining law. I think that will be the best way out of the difficulty. They recommend a United

States law, but it is not based on this question of exhausted mining. Of course it will come under that head. I think the secretary is original in this matter. They think there ought to be a general law for the States. I think that would be a very good thing too, and probably would be better than State legislation.

A MEMBER: Mr. President, I don't know where you get the idea that there is more bad management in the Sunday Creek Valley than in the Hocking Valley. The Sunday Creek Valley is censured more for waste of coal than the Hocking Valley. I am very familiar with the mines in both Valleys, and as bad management as ever was in any mine under the sun I think has been practiced in the Hocking Valley. I know of whole entries in the Hocking Valley where the rooms have not been driven 20 feet until the whole entry has been lost, rooms and all.

THE CHAIR: From what cause.

FORMER SPEAKER: From bad management, not coal enough left to hold the hill up. The entries run together some places not more than 2 feet; some places they didn't realize that they were taking out the pillars between the entries where they were running parallel until the pick was driven through. I know that in two cases. In W. B. Brooks' mine right at Nelsonville.

THE CHAIR: Don't you blame the bank boss for that?

FORMER SPEAKER: I blame the bank boss, because Mr. Brooks was in Columbus and the mine was in his charge, and his mine in Section 19 is standing there to-day with about 40 per cent. of the coal left there that will never be got. I don't see why the impression is abroad that the bad management has been in the Sunday Creek Valley. I think there would be nothing that would be more creditable to the Institute than if they could bring about some way to prevent this loss of coal. It is an outrage on everybody that owns property in that vicinity. The coal is lying there that ought to be left in such a shape that it could be got at when the interior of the hills is worked. But instead of that a squeeze is on there and it never will be got out. I think Mr. Haseltine's paper is very good and worthy of discus-

sion, and I think if the land owners realized how their coal had been wasted that they would be all very much interested in it, and would see that there ought to be something done to protect the coal fields of Ohio.

MR. HARRY: I think if Mr. Brooks had had a plat made of his mines, that the bank boss would not have broken through the ribs that way. I think if the law was in such shape that the department should indorse plats made of the mines, so they would know what they were doing, that the coal could be got out cleaner.

SECRETARY HASELTINE: Mr. Harry, tell us in the mines of Jackson County with which you are familiar as any other man in the State, what percentage of the coal that has been worked over there has been and can be taken out, that is left in pillars?

MR. HARRY: Well, a great deal of coal is left there, and we can attribute it to that cause as much as anything else. There never was a plat made until the last few years of a mine in Jackson County.

THE CHAIR: To insufficient pillars?

MR. HARRY: To not knowing what they were doing in mines, having no plats and no survey made. I don't think there was ever a mine platted in Jackson County at all until a year ago.

THE CHAIR: What good would a plat or a map of a mine do if the mine boss don't keep the pillar between two entries the right thickness.

MR. HARRY: The engineer is expected to put up sights to run the entry by.

THE CHAIR: Is the engineer going to be in every day?

MR. HARRY: No sir, he don't have to be. There is a sight in every room and they dictate to the mine boss how he shall work the room. As for the mine boss instructing the company in regard to its mine they wouldn't allow it intimated. They don't ask the mine boss, they ask the engineer. They are held responsible and they go in once a month and put in sights or as often as it is necessary.

THE CHAIR: Having their own engineer to run the mine?

MR. HARRY: Yes sir.

THE CHAIR: Then it is the mine boss. But here is the question I want to get at. There is an entry and here is an entry. There are two cross entries on the double entry system, starting with 16 feet between them and starting them right on the butts. Ain't that enough of a sight for any common sense man to keep at least within 9 feet, and when he makes his next breakthrough only 20 yards ahead if his pillars has got down even to 6 feet. Can't he start in the new again? If he will allow the miners to gouge in or drive into any shape at all, the two entries will come together or else he will get them in that direction. I have seen that done until there was 10 yards between the two entries. When a mine boss will allow only a few feet, 2 or 3 feet or 5 feet as I have seen it and as has been stated here by others, certainly he is to blame for it. Now if it is not the duty of the mine boss to see that corrected, I don't know what I would want a mine boss for. What would you want to pay him for? I claim that when a pillar gets insufficient in our district, the fault is more with the boss than anybody else, because you have the sights right there off the butts. Let me ask Mr. Harry this question: is there a mine boss in this State that don't know enough without an engineer to look at a compass and make a point himself? If there is I say he shouldn't be a mine boss.

MR. HARRY: I am sorry to say there are a great many of them.

THE CHAIR: Well, if there are, I wouldn't pay such a mine boss. Why even a pocket compass, a small compass with it a man could certainly keep his pillars right if he would pay the proper attention. It don't matter whether there is an engineer in there every week if the proper attention is given by the mine boss to see that the men do their work properly.

MR. HARRY: When you are talking about legislation in regard to taking out coal in better shape, I think the only legislation that is needed for that is to get the proper surveys of the

mines—have the laws in such shape that that can be done, make them get a proper plat made of the mine; then the companies can see the condition of their own mines, and they could find out by doing that whether their mine bosses were doing right. As I said before, in our County they are doing it to a certain extent, but there are a great many mines down there that have never been platted, and I don't suppose there was ever a compass inside of it, and it is a fact to-day that a great many of the mines down there, that while they attempt to make a plat of some kind and it may be correct at the time, but it has never been kept up, and they don't know where they are, and they just work on until they have got out as much as they think they can get out and then quit.

PROF. SPERR: Mr. President, I think that we ought to have a committee appointed to consider this matter. This is a very interesting discussion to me and I think it is the most important subject that has come before us, and the Institute should not drop it but keep it up, and if nothing is accomplished at first keep at it until something is accomplished.

SECRETARY HASELTINE: I would ask whether this committee shall be instructed to consider ways and means?

PROF. SPERR: That is substantially the motion.

The question then coming on the motion of Prof. Sperr to appoint a committee to consider the question of exhaustive mining, the motion prevailed.

THE CHAIR: I will appoint Mr. Haseltine, Mr. Wileman and Prof. Sperr to take this matter under consideration and to see what can be done.

A MEMBER: Mr. President, I have heard this discussion and it has interested me somewhat. I live in a mining county, and I know a coal company that own a mine down there and I know that they don't know anything about mining. It is the Maderia Company on the Baltimore and Ohio Southwestern Railroad. Neither one of the men who own the mine ever were miners in their lives, but they have some mineral land in Vinton

County. They were raised in a farming country and hardly were ever in a mining country, and they don't know anything about mining, and whatever they do in their works has to be done by the men in charge, and whatever is done there, is done by the intelligence of these men that are in the mine.

After hearing this discussion I am satisfied that there ought to be a law requiring the mine boss, the bank boss so called, to undergo a technical examination for that purpose. They ought to have a certain amount of information, and the law ought to require them to mine after a plan laid down by the State Mine Inspector.

SECRETARY HASELTINE: Mr. President, I move we adjourn.

The motion being seconded prevailed.